On File

109901
SHAUGHNESSEY NO.

REVIEW NO.

EEB BRANCH REVIEW

DATE: IN 10/5/84 OUT DEC 12 1984

FILE OR REG. NO. 3125-320

PETITION OR EXP. PERMIT NO.

DATE OF SUMBMISSION 9/7/84

DATE RECEIVED BY HED 10/4/84

RD REQUESTED COMPLETION DATE 1/22/85

EEB ESTIMATED COMPLETION DATE 1/15/85

RD ACTION CODE/TYPE OF REVIEW 400/Miscellaneous Data

TYPE PRODUCT(S): I, D, H, F, N, R, S Fungicide

DATA ACCESSION NO(S).

PRODUCT MANAGER NO. H. Jacoby(21)

PRODUCT NAME(S) Bayleton 50 WP

COMPANY NAME Mobay Chemical Corporation

SUBMISSION PURPOSE Submission of further EEB data for review

SHAUGHNESSEY NO.	CHEMICAL, & FORMULATION	% A.I.

MEMORANDUM

TO: Henry Jacoby
Product Manager (21)
Registration Division (TS-767)

THRU: Richard Stevens
Acting Head, Review Section No. 4
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

Harry Craven, Acting Chief
Ecological Effects Branch
Hazard Evaluation Division (TS-769)

SUBJECT: Data Evaluation and Review of the Seven Aquatic Acute Toxicity Studies of Triadimefon

The Ecological Effects Branch has received and reviewed the following toxicity studies submitted by Mobay Chemical Corporation (Reg. NO. 3125-320; Acc. No 254693). These studies are being included in the branch file on triadimefon (Bayleton 50WP).

1. Bayer A G (1974) Report NO. FF-9

   Abbreviated review: the report contains only a summary sheet.

2. Bayer A G (1974) Report No. FG-121

   Abbreviated review: the report contains only a summary sheet.

3. Bayer A G (1974) Report No. FM-30

   Abbreviated review: the report contains only a summary sheet.

4. Bayer A G (1974) Report No. FO-64 [?]

   Abbreviated review: the report contains only a summary sheet.

5. Heimback (1983) Akute toxizitat von triadimefon fur wasscrflohe, EHR File, No. 2628

   Abbreviated review: the report is in German with an English summary.

6. Melson and Roney (1977) Acute toxicity of Bayleton 50 WP to bluegill and rainbow trout; Report No. 54046

The study is scientifically sound, but does not fulfill guideline requirements for fish acute LC50 s, because formulated product was tested.

7. Carlisle and Roney (1983) Acute toxicity of triadimefon (Bayleton) to crayfish, Report No. 437

The study is scientifically sound but does not fulfill the guideline requirements for fish acute LC50 because of 1) less sensitive species tested 2)over-loading and 3) low D.O.

Richard M. Lee 12/11/84

Richard M. Lee
Entomologist
EEB/HED

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Technical 25 % ?

3. Study Identification:

   Bayer A G , Biological Research, 1974, Report No. FF-9

4. Study Type: Fish Acute LC_{50}

   Species: Rainbow trout, Salmo gairdneri

5. Reviewed by:

   Richard M. Lee
   Entomologist
   Ecological Effects Branch/HED

   Date: 12/5/84

   Review Time: 1 h.

   Signature: Richard M Lee

6. Approved by: Signature: Richard R Stebbins

   Title: Acting Sec. Head

7. Reported Conclusions:

   Estimated LC_{50} (96h.) = 40 - 60 ppm

8. Reviewer's Conclusions:

   The report contains only a summary sheet.

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Technical 25 % ?

3. Study Identification:

   Bayer A G , Biological Research, 1974, Report No. FG-121

4. Study Type: Fish Acute LC^{50}

   Species: Goldfish, Carassius auratus

5. Reviewed by:

   Richard M. Lee — Date: 12/5/84
   Entomologist
   Ecological Effects Branch/HED — Review Time: 1 h.

   Signature: Richard M. Lee

6. Approved by: Signature: Richard R Stein

   Title: Acting Sec. Head

7. Reported Conclusions:

   Estimated LC^{50} (96h.) is ca. 60 ppm.

8. Reviewer's Conclusions:

   The report contains only a summary sheet.

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Technical 25 % ?

3. Study Identification:

   Bayer A G , Biological Research, 1974, Report No. FM-30

4. Study Type: Fish Acute LC_{50}

   Species: Mirror carp, Cyprinus carpio

5. Reviewed by:

   Richard M. Lee — Date: 12/5/84
   Entomologist
   Ecological Effects Branch/HED — Review Time: 1 h.

   Signature: Richard M. Lee

6. Approved by: Signature: Richard R. Stebbins

   Title: Acting Sec. Head

7. Reported Conclusions:

   Estimated LC_{50} (96h.) = 40 - 60 ppm

8. Reviewer's Conclusions:

   The report contains only a summary sheet.

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Technical 25 % ?

3. Study Identification:

   Bayer A G , Biological Research, 1974, Report No. F0-64 [?]

4. Study Type: Fish Acute LC_{50}

   Species: Gold ides, Idus idus

5. Reviewed by:

   Richard M. Lee — Date: 12/5/84
   Entomologist
   Ecological Effects Branch/HED — Review Time: 1 h.

   Signature: Richard M. Lee

6. Approved by: Signature: Richard B. Sun

   Title: Acting Sec. Head

7. Reported Conclusions:

   Estimated LC_{50} (96h.) = 60 - 80 ppm

8. Reviewer's Conclusions:

   The report contains only a summary sheet.

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Technical ?

3. Study Identification:

   Heimbach (1983) Akute Toxizitat von triadimefon fur wasscrflohe, EHR File, No. 2628, Submitted by Mobay Chem. Corp., Acc. No. 254693

4. Study Type: Aquatic invertibrate acute toxicity test

   Species: Daphnia magna

5. Reviewed by:

   Richard M. Lee
   Entomologist
   Ecological Effects Branch/HED

   Date: 12/6/84

   Review Time: 1 h.

   Signature: Richard M. Lee

6. Approved by: Signature: Richard D. Schmitz

   Title: Acting Sec. Head

7. Reported Conclusions:

   The EC_{50} (48 h) for daphnia was 11.3 mg/L. with 95 % C.I. of 9.0 - 19.1 mg/L.

8. Reviewer's Conclusions:

   The report is in German with an English summary.

cc: C. Laird

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton® 50 WP)

   Shaughnessy Number: 109901

2. Test Material: Bayleton 50 WP

3. Study Identification:

   Nelson, D. L. and D. J. Roney (1977) Acute Toxicity of Bayleton® 50 Wettable Powder to Bluegill and Rainbow Trout, Report No. 54046, Submitted by Mobay Chem. Corp., Acc. No. 254693

4. Study Type: Fish Acute LC_{50}

   Species: Bluegill, Lepomis microchirus
   Rainbow trout, Salmo gairdneri

5. Reviewed by:

   Richard M. Lee
   Entomologist
   Ecological Effects Branch/HED

   Date: 12/5/84 ✓

   Review Time: 1 h.

   Signature: Richard M. Lee

6. Approved by: Signature: Kashef K. Shamim

   Title: Acting Sec. Head

7. Reported Conclusions:

   The 96-h LC_{50} values (95 % C.I.) for bluegill and rainbow trout were 16 (14-18) ppm and 28 (25-32) ppm, respectively.

8. Reviewer's Conclusions:

   The 96-h LC_{50} values for triadimefon in bluegill and rainbow trout are estimated to be 16 ppm and 28 ppm, respectively. It is slightly toxic to both aquatic species tested. The studies do not fulfill guidelines requirements for fish acute LC_{50}, because the formulated materials were tested.

✓

9. Material/Methods Employed

A 96-h static acute toxicity test. General procedures followed EPA protocol.

A. Standards

1. Species: Bluegill (Lepomis microchirus), Rainbow trout (Salmo gairdneri)

2. Test Material:
25 % wettable powder

3. Temperature
24°C (bluegill), 15°C (rainbow trout); controlled by means of water bath

B. Protocols

1. Not aerated.

2. Five dose levels: No duplicate.

Bluegill : 0 6.9 10.1 14.8 21.8 32.1 ppm

Rainbow trout : 0 10.1 14.8 21.8 32.1 47.1 ppm

3. Fish 35 - 75 mm (0.5 - 1.0 gr.), fishes were not fed

4. Number of fish: 10

5. Test vessel and System:

Five gal. widemouth glass jars which contain 15 litters of bioassay water

Loading: Less than one gram per litter of water

6. Water

a. D.O.: Saturated with dissolved oxygen before initiation of test

b. pH: 7.6

c. Salivity:

d. Water Chemistry:
30 mg $CaSO_4$, 30 mg $MgSO_4$, 48 mg $NaHCO_3$ and 2 mg KCL per L of deionized water

10. Discussion/Results

The 96-h LC_{50} (95 % C.I.) values for bluegill and rainbow trout were 16 (14-18) ppm and 28 (25-32) ppm, respectively.

11. Statistical Analysis

Approximate LC_{50} values and 95 % C.I. were calculated according to Well's method (Biometrics, 8, 240, 1952).

12. Reviewer's Evaluation

a. Test procedures

The procedures used generally followed EPA's protocol and scientifically sound.

b. Statistical Analysis

The procedure used is appropriate.

c. Discussion/Results

The 96-h LC_{50} values for bluegill and rainboe trout were estimated to be 16 ppm and 28 ppm; it is slightly toxic to both species tested.

Conclusion:

1. Category: Supplemental

2. Rationale: The formulated product, instead of technical material, was tested.

3. Repairability: No

12/10/84

EEB Data Evaluation Record

1. Chemical: Triadimefon (Bayleton 50 WP)

   Shaughnessy Number: 109901

2. Test Material: 50% WP

3. Study Identification:

   Carlisle and Roney (1983) Acute Toxicity of Teiadimefon (Bayleton®) to Crayfish, Report No. 437, Submitted by Mobay Chem. Corp., Acc. No. 254693

4. Study Type: Aquatic invertebrate acute toxicity test
   Species: crayfish, Orconectes neglectus

5. Reviewed by:

   Richard M. Lee — Date: 12/10/'84
   Entomologist
   Ecological Effects Branch/HED — Review Time:

   Signature: Richard M. Lee

6. Approved by: Signature: Rachael R. Eden

   Title: Acting Sec Head

7. Reported Conclusions:

   The 96-h LC_{50} of technical triadimefon is estimated to be 104 ppm with 95 % C.I. of 86 - 125 ppm under static condition.

8. Reviewer's Conclusions:

   This study can be used for hazard assessment purpose. However it does not meet the guideline requirements. Using the toxicity categories of Brooks et al. (1973) the acute LC50 of 104 mg/l would place Triadimefon into the category of practically non toxic".

cc: C. Laird

9. Material/Methods Employed

A 96-h static acute toxicity test

A. Standard

1. Tech. 93.2 %
2. Species: Crayfish (Orconectes neglectus)
3. Temp.: 17.5 - 21.9 °C
4. No aeration during test
5. LIght: 16 h

B Protocol

1. Test organisms

   a. mean body weight 2.2 g (probably immature stage ?)
   b. source: Fattig Fish Hatchery, Brady Neb.
   c. acclimated for at least 5 days

2. 10 crayfishes/dose; 2 cont. + 9 doses

3. Not fed during test.

4. Vassel

   a. size: 19 L glass jars with 15 L water
   b. loading: 2.2 g x 10 = 22g/15L = 1.47 g/L ?

5. Water: activated carbon and sulfite dechlorinated tap water

   a. D.O. : 1.0 - 8.3 ppm(21.9 °C) or 11.7 % - 97 % ?
   b. pH : 7.41 - 8.39
   c. Hardness: 183 - 188 ppm
   d. Alkalinity: 128 - 131 ppm

6. Concentrations(nominal): 0, 0, 1, 2, 4, 8, 16, 32, 64,128, 256 ppm

7. Statistical method: Weil's method (Biometries, 8:249, 1952)

10. Discussion/Results

The 96-h LC50 value(with 95 % C.I.) was 104(86 - 125) ppm. The lowest lethal concentration was 128 ppm. The no-observed-effect concentration was 16 ppm.

11. Statistical Analysis

Appropriate LC50 value and 95 % C.I. were calculated according to Weil's method (Biometric, 8 : 240, 1952)

12. Reviewer's Evaluation

a. Test Procedure

The procedures used are scientifically sound. However, there were the following deficiencies:

1) Crayfish is not preferred (sensitive) test species
2) Mean body weight of 2.2 g, immature stage ?
3) Loading was 1.47 g/L --- i.e., over 1 g/L
4) D.O. : 11.7 %, at times, is too low

b. Statistical Analysis

The procedure used is appropriate.

c. Discussion/Results

The 96-h LC50 was 104 ppm with 95 % C.I. of 86 to 125 ppm. It is practically nontoxic to clayfish.

Conclusion:

1. Category: Supplemental

2. Rationale: See 12.a Test Procedure

3. Repairability: NO